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# Certifications

**WBENC:** 237019

HUB:

1752439743100-86536

**DBE:** VN 20657

**NCTRCA** WFWB38444Y0909

# **NELAP Certifications**

Lubbock: T104704219-08-TX El Paso:

T104704221-08-TX

Midland: T104704392-08-TX

LELAP-02003 Kansas E-10317 LELAP-02002

# Analytical and Quality Control Report

**Brad Davis** Zia Engineering & Environmental 755 S. Telshor Blvd. Suite F-201 Las Cruces, NM, 88011

Report Date: September 18, 2009

Work Order:

9090319

Project Name: HELSTF Chromate Spill Groundwater

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			$\operatorname{Date}$	$\operatorname{Time}$	$\operatorname{Date}$
$\mathbf{Sample}$	Description	Matrix	$\operatorname{Taken}$	$\operatorname{Taken}$	Received
209097	HLSF-0143-HMW-013-0909	water	2009-09-01	10:30	2009-09-02

### Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 65 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

#### Notes:

For inorganic analyses, the term MQL should actually read PQL.

#### Standard Flags

- ${f U}\,$  Not detected. The analyte is not detected above the SDL.
- ${f J}$  Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
- B The sample contains less than ten times the concentration found in the method blank.
- JB The analyte is positively identified and the value is approximated between the SDL and MQL.

The sample contains less than ten times the concentration found in the method blank.

The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

# Case Narrative

Samples for project HELSTF Chromate Spill Groundwater were received by TraceAnalysis, Inc. on 2009-09-02 and assigned to work order 9090319. Samples for work order 9090319 were received intact without headspace and at a temperature of 7.0 deg. C, just sampled, on ice.

Samples were analyzed for the following tests using their respective methods.

		$\operatorname{Prep}$	$\operatorname{Prep}$	QC	Analysis
Test	Method	$\operatorname{Batch}$	Date	$\operatorname{Batch}$	$\operatorname{Date}$
Ag, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57
Alkalinity	SM 2320B	54231	2009-09-10 at 11:00	63527	2009-09-10 at $11:00$
Al, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
Ammonia	SM 4500-NH3 B,C	54092	2009-09-05 at $16:00$	63370	2009-09-05  at  17:00
As, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
Ba, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
Be, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
Bromide (IC)	E 300.0	54360	2009-09-03 at $16:35$	63672	2009-09-03 at $16:35$
Ca, Total	S 6010B	54079	2009-09-09 at 09:16	63545	2009-09-15  at  08:54
Cd, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
Chloride (IC)	E 300.0	54360	2009-09-03 at $16:35$	63672	2009-09-03 at $16:35$
Chromium, Hexavalent	$\mathrm{SM}\ 3500\text{-}\mathrm{Cr}\ \mathrm{B}$	54057	2009-09-02 at 09:46	63330	2009-09-02 at $09:46$
Co, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
Cr, Dissolved	S 6010B	54154	2009-09-11 at $08:26$	63462	2009-09-11 at $11:56$
Cr, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
Cu, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
Fe, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
Fluoride (IC)	$\to 300.0$	54360	2009-09-03 at $16:35$	63672	2009-09-03 at $16:35$
Hg, Total	S 7470A	54009	2009-09-04 at $13:00$	63280	2009-09-04 at $14:18$
K, Total	S 6010B	54079	2009-09-09 at 09:16	63545	2009-09-15  at  08:54
Mg, Total	S 6010B	54079	2009-09-09 at $09:16$	63545	2009-09-15  at  08:54
Mn, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
Mo, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
Na, Total	S 6010B	54079	2009-09-09 at $09:16$	63545	2009-09-15  at  08:54
Ni, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
Nitrate and Nitrite as N	SM $4500\text{-NO3}$ E	54370	2009-09-17 at 09:43	63681	2009-09-17  at  15:44
O/G	$\to 1664$	54391	2009-09-17 at 11:00	63699	2009-09-17  at  14:30
Pb, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
pH	SM 4500-H+	54064	2009-09-02 at 12:00	63341	2009-09-02 at $12:00$
P, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
Sb, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
Se, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
SO4 (IC)	E 300.0	54360	2009-09-03 at $16:35$	63672	2009-09-03 at $16:35$
TDS	SM 2540C	54173	2009-09-03 at $14:20$	63473	2009-09-03 at $14:20$
TKN	$\to 351.3$	54150	2009-09-09 at $11:15$	63441	2009-09-09 at $15:00$
Tl, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at $12:57$
TOC	SM 5310C	54065	2009-09-08 at $13:26$	63340	2009-09-08 at $13:29$
TPH DRO	Mod. 8015B	54035	2009-09-04 at $15:00$	63307	2009-09-07 at $18:00$
TPH GRO	S 8015B	53976	2009-09-03 at $14:48$	63239	2009-09-03 at $14:48$
V, Total	S 6010B	54079	2009-09-09 at $09:16$	63374	2009-09-09 at $12:57$
Zn, Total	S 6010B	54079	2009-09-09 at 09:16	63374	2009-09-09 at 12:57

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9090319 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: September 18, 2009 Work Order: 9090319 Page Number: 5 of 65

HELSTF Chromate Spill Groundwater

# **Analytical Report**

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analytical Method: Analysis: Ag, Total S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

SDLMQLMethod Based Based Blank MQLMDL SDLParameter Result Result Result Units Dilution (Unadjusted) (Unadjusted) Flag Total Silver 0.00111 < 0.00111 < 0.00500< 0.00111mg/L0.00111 0.005

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Al, Total S 3010A Analysis: Analytical Method: S 6010B Prep Method: QC Batch: Date Analyzed: 2009-09-09 Analyzed By: 63374 RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

SDLMQLMethod Based Blank MQLMDLBased Flag Parameter Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Aluminum 3.25 3.25 < 0.00301 mg/L0.003010.050.00301

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: El Paso

Analysis: Alkalinity Analytical Method: SM 2320BPrep Method: N/AQC Batch: 63527 Date Analyzed: 2009-09-10 Analyzed By: JGPrep Batch: Sample Preparation: Prepared By: 54231JG

SDLMQLMethod Based Based Blank MQLMDL Flag Parameter Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Hydroxide Alkalinity mg/L as CaCo3 < 1.00 <1.00 < 1.00 1.00 1 1 UCarbonate Alkalinity < 1.00 < 1.00 < 1.00mg/L as CaCo3 1 1.00 1 1 Bicarbonate Alkalinity 200200< 4.00 mg/L as CaCo3 4.00 4 4 1 200 mg/L as CaCo3Total Alkalinity 200 < 4.001 4.00 4 4

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Analytical Method: SM 4500-NH3 B,C Prep Method: N/AAmmonia QC Batch: 63370 Date Analyzed: Analyzed By: AH2009-09-05 2009-09-05 Prep Batch: 54092 Sample Preparation: Prepared By: AH

Report Date: September 18, 2009 Work Order: 9090319 Page Number: 6 of 65

HELSTF Chromate Spill Groundwater

		SDL	MQL	Method					
		Based	Based	Blank				MQL	MDL
Parameter	Flag	Result	Result	Result	Units	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Ammonia-N	J	0.504	<1.00	< 0.353	mg/L	1	0.353	1	0.353

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: As, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 2009-09-09 Analyzed By: 63374 Date Analyzed: RRPrep Batch: Sample Preparation: 2009-09-09 Prepared By: KV54079

SDLMQL Method Based Based Blank MQLMDL Parameter Result Result Result Units Dilution SDL Flag (Unadjusted) (Unadjusted) Total Arsenic < 0.00448 < 0.0100 < 0.00448mg/L0.00448 0.01 0.00448 1

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Ba, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: Analyzed By: 2009-09-09 RRPrep Batch: Sample Preparation: 2009-09-09 Prepared By: KV54079

SDLMQLMethod MQLMDL Based Based Blank Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Barium 0.07100.0710< 0.00105 0.001050.005 0.00105 mg/L1

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Be, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079Sample Preparation: 2009-09-09 Prepared By: KV

SDLMQLMethod MQLMDL Based Based Blank Parameter Flag Result Result Result Dilution SDL(Unadjusted) Units (Unadjusted) Total Beryllium < 0.000450 < 0.00200 < 0.000450 mg/L0.0004500.002 0.00045

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: El Paso

Analysis: Bromide (IC) Analytical Method: E 300.0 Prep Method: N/A

Report Date: September 18, 2009 Work Order: 9090319 Page Number: 7 of 65 **HELSTF** Chromate Spill Groundwater QC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JRPrepared By: Prep Batch: Sample Preparation: 54360 2009-09-03 JRSDLMQLMethod MQLBased Based Blank MDL

Units

mg/L

Result

< 0.197

SDL

0.197

(Unadjusted)

0.27

(Unadjusted)

0.0394

Dilution

5

# Sample: 209097 - HLSF-0143-HMW-013-0909

Result

< 0.197

Result

< 1.35

Flag

Parameter

 $\overline{\text{Bromide}}$ 

Laboratory: Lubbock Ca, Total S 3010A Analysis: Analytical Method: S 6010B Prep Method: QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KVSDLMQL Method Based Based Blank MQLMDL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) 10 Total Calcium 524524< 1.17mg/L1.17 0.117 1

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock Analysis: Cd, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: Date Analyzed: Analyzed By: 63374 2009-09-09 RRPrep Batch: 54079 Sample Preparation: Prepared By: 2009-09-09 KVSDLMQLMethod Based Based Blank MQLMDL Parameter Flag Result Result ResultUnits Dilution SDL(Unadjusted) (Unadjusted) Total Cadmium < 0.000303 < 0.00200 < 0.000303 0.0003030.0020.000303mg/L

## Sample: 209097 - HLSF-0143-HMW-013-0909

El Paso Laboratory: Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/AQC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JRPrep Batch: 54360 Sample Preparation: Prepared By: JR2009-09-03 SDLMQLMethod Based Based Blank MQL MDLParameter SDLFlag Result Result Result Units Dilution (Unadjusted) (Unadjusted) Chloride 524524<32.0 mg/L50 32.0 1.22 0.6404

Sample: 209097 - HLSF-0143-HMW-013-0909

Report Date: September 18, 2009 Work Order: 9090319 Page Number: 8 of 65

**HELSTF** Chromate Spill Groundwater

Laboratory: El Paso

Analysis: Chromium, Hexavalent Analytical Method: SM 3500-Cr B Prep Method: N/AQC Batch: Date Analyzed: 2009-09-02 Analyzed By: MD63330 Prep Batch: 54057Sample Preparation: 2009-09-02 Prepared By: JR

 $\operatorname{SDL} \operatorname{MQL} \operatorname{Method}$ 

Based Based Blank MQL MDL Parameter Flag Result Result ResultUnits Dilution SDL (Unadjusted) (Unadjusted) Hexavalent Chromium 0.01100.0110< 0.00594mg/L1 0.005940.01 0.00594

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Co, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

SDL MQL Method

Based Based MQLMDLBlank Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Cobalt 0.001000.000822 < 0.00200 < 0.000822 mg/L 0.002 0.000822

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Analytical Method: Prep Method: S 3005A Cr, Dissolved S 6010B QC Batch: 63462 Date Analyzed: 2009-09-11 Analyzed By: RRPrep Batch: 54154Sample Preparation: 2009-09-11 Prepared By: KV

 $\operatorname{SDL} \operatorname{MQL} \operatorname{Method}$ 

Based Based Blank MQLMDL SDLResult Parameter Flag Result Result Units Dilution (Unadjusted) (Unadjusted) 0.001 Dissolved Chromium 0.003000.003000.000583 < 0.000583 mg/L0.000583

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Cr, Total Analytical Method: Prep Method: S 3010A S 6010B QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

 $\mathrm{SDL} \qquad \mathrm{MQL} \qquad \mathrm{Met} \, \mathrm{hod}$ 

		$\operatorname{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	Result	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Chromium		0.0350	0.0350	< 0.000583	mg/L	1	0.000583	0.005	0.000583

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**HELSTF** Chromate Spill Groundwater

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Cu, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

SDL MQL Method

Blank MQLBased Based MDL Parameter Flag Result Result Result Units Dilution SDL (Unadjusted) (Unadjusted) Total Copper 0.00400< 0.00500 < 0.000843 mg/L0.000843 0.0050.000843

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Fe, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 2009-09-09 Analyzed By: 63374 Date Analyzed: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

> SDL MQL Method Based Based Blank

MQLMDL Parameter Result Units Dilution SDLFlag Result Result (Unadjusted) (Unadjusted) Total Iron 2.502.50< 0.000872 mg/L1 0.0008720.01 0.000872

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: El Paso

Analysis: Fluoride (IC) Analytical Method: E 300.0Prep Method: N/AQC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JRPrep Batch: 54360 Sample Preparation: 2009-09-03 Prepared By: JR

SDL MQL Method

MQL MDL Based Based Blank SDLParameter Result Result Result Units Dilution Flag (Unadjusted) (Unadjusted) Fluoride 4.434.43< 0.217mg/L5 0.2170.17 0.0434

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Hg, Total Analytical Method: S 7470A Prep Method: N/AQC Batch: 63280 TPDate Analyzed: 2009-09-04 Analyzed By: Prep Batch: 54009 Sample Preparation: 2009-09-04 Prepared By: TP

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sample 209097 ce	$ontinued \dots$
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Parameter	$\operatorname{Flag}$	$egin{array}{c} \mathrm{SDL} \\ \mathrm{Based} \\ \mathrm{Result} \end{array}$	MQL Based Result	Method Blank Result	Units	Dilution	$\operatorname{SDL}$	$egin{aligned}  ext{MQL} \  ext{(Unadjusted)} \end{aligned}$	$egin{aligned}  ext{MDL} \  ext{(Unadjusted)} \end{aligned}$
		$\operatorname{SDL}$	MQL	Method					
		$\mathbf{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	$\mathrm{MDL}$
Parameter	Flag	Result	$\operatorname{Result}$	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Mercury	U	< 0.0000329	< 0.000200	< 0.0000329	mg/L	1	0.0000329	0.0002	3.29e-05

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Analysis: K, Total Analytical Method: Prep Method: S 3010A S 6010B QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RRPrep Batch: 54079 Sample Preparation: Prepared By: 2009-09-09 KVSDLMQLMethod Rased Rlank MOI MDI Based

		Daseu	Daseu	Diank				MGL	MDL
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Result}$	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Potassium		106	106	<1.72	$\mathrm{mg/L}$	10	1.72	1	0.172

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Mg, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63545Date Analyzed: 2009-09-15 Analyzed By: RRPrep Batch: 54079Sample Preparation: Prepared By: 2009-09-09 KVSDL $\mathbf{MQL}$ Method

		$\operatorname{Based}$	Based	$\operatorname{Blank}$				MQL	$\mathrm{MDL}$
Parameter	Flag	$\operatorname{Result}$	$\operatorname{Result}$	$\operatorname{Result}$	Units	$\operatorname{Dilution}$	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Magnesium		470	470	<1.60	$\mathrm{mg/L}$	10	1.60	1	0.16

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Mn, Total Analysis: Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079Sample Preparation: 2009-09-09 Prepared By: KV

		$\operatorname{SDL}$	MQL	Method					
		$\operatorname{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Result}$	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Manganese		0.0690	0.0690	< 0.000305	$\mathrm{mg/L}$	1	0.000305	0.0025	0.000305

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**HELSTF** Chromate Spill Groundwater

Laboratory: Lubbock

Analysis: Mo. Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

 $\mathrm{SDL}$   $\mathrm{MQL}$   $\mathrm{Method}$ 

Blank MQL Based Based MDL Dilution Parameter Flag Result Result Result Units SDL(Unadjusted) (Unadjusted) Total Molybdenum 0.1890.189< 0.00119 mg/L0.00119 0.01 0.00119 1

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Na, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63545Analyzed By: Date Analyzed: 2009-09-15 RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

SDL MQL Method

MQLMDL Based Based Blank Parameter Dilution SDLFlag Result Result Result Units (Unadjusted) (Unadjusted) Total Sodium 1090 1090 < 0.500mg/L10 0.5001 0.05

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Ni, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

 $\operatorname{SDL} \operatorname{MQL} \operatorname{Method}$ 

Blank MQLMDL Based Based Parameter Result Result Result Dilution SDLFlag Units (Unadjusted) (Unadjusted) Total Nickel < 0.00121< 0.00500< 0.00121mg/L0.00121 0.0050.00121

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Nitrate and Nitrite as N Analytical Method: SM 4500-NO3 E Prep Method: N/AQC Batch: 63681 KVDate Analyzed: 2009-09-17 Analyzed By: Prep Batch: 54370 Sample Preparation: 2009-09-17 Prepared By: KV

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sample	200007	continued		
sample	209091	communaca		

Parameter	$\operatorname{Flag}$	$\begin{array}{c} \mathrm{SDL} \\ \mathrm{Based} \\ \mathrm{Result} \end{array}$	$egin{array}{c} \mathbf{MQL} \\ \mathbf{Based} \\ \mathbf{Result} \end{array}$	Method Blank Result	Units	Dilution	$\operatorname{SDL}$	$egin{aligned}  ext{MQL} \  ext{(Unadjusted)} \end{aligned}$	MDL (Unadjusted)
		$\operatorname{SDL}$	MQL	Method					
		$\operatorname{Based}$	Based	Blank				MQL	MDL
Parameter	Flag	Result	Result	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Nitrate and Nitrite as N		52.6	52.6	< 7.00	mg/L	200	7.00	0.1	0.035

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: El Paso

Analysis: O/G Analytical Method: E 1664 Prep Method: N/AQC Batch: 63699 Date Analyzed: 2009-09-17Analyzed By: JRPrep Batch: 54391 Sample Preparation: 2009-09-17 Prepared By: JR

SDLMQLMethod Based Based Blank MQLMDLParameter Result Result Result Units Dilution SDL (Unadjusted) (Unadjusted) Flag Oil and Grease 3.60 < 3.60< 5.00< 3.60mg/L 5 3.6

## Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock Analysis: P, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KVSDLMQLMethod

Based Based Blank MQL MDL Flag Parameter Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Phosphorous 0.07200.0720< 0.00289 mg/L0.002890.0250.00289

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Pb, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: Sample Preparation: 2009-09-09 Prepared By: 54079 KV

SDLMQLMethod Based Based Blank MQLMDLParameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) < 0.00326 < 0.00500 < 0.00326 0.005 Total Lead mg/L0.003260.00326

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**HELSTF** Chromate Spill Groundwater

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: El Paso

Analysis: рН Analytical Method: SM 4500-H+Prep Method: N/AQC Batch: 63341 Date Analyzed: 2009-09-02 Analyzed By:  $_{
m JG}$ Prep Batch: 54064Sample Preparation: 2009-09-02 Prepared By: JR

RL

Parameter	$\operatorname{Flag}$	Result	Units	Dilution	$\operatorname{RL}$
На		7.22	s.u.	1	

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Sb, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: Sample Preparation: 2009-09-09 Prepared By: 54079KV

SDL MQL Method

Based Based Blank MQLMDLResult Result Result Dilution SDLParameter Flag Units (Unadjusted) (Unadjusted) Total Antimony < 0.00440 < 0.0200 < 0.00440 0.00440 0.02 0.0044 mg/L1

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Se, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079Sample Preparation: 2009-09-09 Prepared By: KV

SDL MQL Method

		$\operatorname{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	Result	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Selenium		0.0330	0.0330	< 0.00508	$\mathrm{mg/L}$	1	0.00508	0.02	0.00508

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: El Paso

E 300.0 Analysis: SO4 (IC) Analytical Method: Prep Method: N/A QC Batch: 63672Date Analyzed: 2009-09-03 Analyzed By: JRPrep Batch: 54360 Sample Preparation: 2009-09-03 Prepared By: JR

SDL MQL Method Based Based Blank

		Basea	Based	Blank				MQL	MDL
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Result}$	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
$\operatorname{Sulfate}$		4070	4070	< 50.4	${ m mg/L}$	100	50.4	1.33	0.5038

1.601

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**HELSTF** Chromate Spill Groundwater

Laboratory: El Paso

Analysis: TDS Analytical Method: SM 2540CPrep Method: N/AQC Batch: 63473 Date Analyzed: 2009-09-03 Analyzed By: MDPrep Batch: 54173 Sample Preparation: 2009-09-03 Prepared By: MD

SDL MQL Method

Blank MQLBased Based MDL Dilution Parameter Result Result Result Units SDL(Unadjusted) Flag (Unadjusted) 7700 Total Dissolved Solids 7700 < 5.00 mg/L5.00 1 5

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: TKN Analytical Method: E 351.3 Prep Method: N/AQC Batch: Date Analyzed: 2009-09-09 Analyzed By: AH63441 Prep Batch: 54150 Sample Preparation: 2009-09-09 Prepared By: AH

 $\mathrm{SDL}$   $\mathrm{MQL}$   $\mathrm{Method}$ 

MQLMDL Based Based Blank Flag Parameter Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Kjeldahl Nitrogen - N 3.36 <10.0 < 2.45mg/L1 2.4510 2.45

# Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Tl, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079 Sample Preparation: 2009-09-09 Prepared By: KV

 $\mathrm{SDL} \qquad \mathrm{MQL} \qquad \mathrm{Method}$ 

MQLMDL Based Based Blank SDLParameter Result Result Result Dilution Flag Units (Unadjusted) (Unadjusted) Total Thallium < 0.00488< 0.0500< 0.00488mg/L0.004880.050.00488

### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: TOC Analytical Method: SM 5310C Prep Method: N/AQC Batch: 63340 KVDate Analyzed: 2009-09-08 Analyzed By: Prep Batch: 54065Sample Preparation: 2009-09-08 Prepared By: KV

 $continued \dots$ 

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# HELSTF Chromate Spill Groundwater

sample 209097 continued . . .

Parameter	Flag	$\begin{array}{c} {\rm SDL} \\ {\rm Based} \\ {\rm Result} \end{array}$	$egin{array}{l} \mathrm{MQL} \\ \mathrm{Based} \\ \mathrm{Result} \end{array}$	Method Blank Result	Units	Dilution	$\operatorname{SDL}$	$egin{aligned}  ext{MQL} \  ext{(Unadjusted)} \end{aligned}$	$egin{aligned}  ext{MDL} \  ext{(Unadjusted)} \end{aligned}$
		$\operatorname{SDL}$	MQL	Method					
		$\operatorname{Based}$	$\operatorname{Based}$	Blank				MQL	MDL
Parameter	$\operatorname{Flag}$	Result	Result	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Organic Carbon		2.19	2.19	< 0.401	mg/L	1	0.401	1	0.401

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: TPH DRO Analytical Method: Prep Method: N/A Mod. 8015B QC Batch: 63307 Date Analyzed: 2009-09-07 Analyzed By:

Prep Batch: Sample Preparation: Prepared By: 540352009-09-04

SDLMQLMethod Based Based Blank MQLMDLSDLParameter Flag Result Result Result Units Dilution (Unadjusted) (Unadjusted) DRO < 0.8760.876 < 0.876< 5.00mg/L5 0.876

					$\operatorname{Spike}$	Percent	Recovery
$\mathbf{Surrogate}$	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	${f Amount}$	Recovery	Limits
n-Triacontane		9.51	$_{ m mg/L}$	1	10.0	95	57.3 - 151

#### Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015BPrep Method: S 5030B QC Batch: 63239 Date Analyzed: 2009-09-03 Analyzed By: ER2009-09-03 Prep Batch: Sample Preparation: 53976 Prepared By: ER

SDLMQLMethod Based Based Blank MQLMDLParameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted)  $\overline{\text{GRO}}$ < 0.1520.2 < 0.200 < 0.152mg/L0.1520.1521

Surrogate	Flag	Result	$\operatorname{Units}$	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	$egin{array}{c} { m Recovery} \\ { m Limits} \end{array}$
Trifluorotoluene (TFT)		0.108	$_{ m mg/L}$	1	0.100	108	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.106	$\mathrm{mg/L}$	1	0.100	106	80 - 109

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

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HELSTF Chromate Spill Groundwater

Analysis: QC Batch: Prep Batch:	V, Total 63374 54079		Date	lytical Method e Analyzed: ple Preparatio	200	010B 09-09-09 09-09-09		Prep Metho Analyzed B Prepared B	y: RR
		$\operatorname{SDL}$	MQL	Method					
		$\operatorname{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter	$\operatorname{Flag}$	Result	Result	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Vanadi	um	0.0270	0.0270	< 0.000426	mg/L	1	0.000426	0.005	0.000426

Sample: 209097 - HLSF-0143-HMW-013-0909

Laboratory: Lubbock

Analysis: Zn, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RRPrep Batch: 54079Sample Preparation: 2009-09-09 Prepared By: KV

SDLMQLMethod MQLMDL Based Based Blank SDLParameter Flag Result Result Result Units Dilution (Unadjusted) (Unadjusted) Total Zinc 0.06100.0610< 0.000465 mg/L0.0004650.0050.000465

Method Blank (1)

QC Batch: 63239 Date Analyzed: 2009-09-03 Analyzed By: ER
Prep Batch: 53976 QC Preparation: 2009-09-03 Prepared By: ER

Reporting Parameter Flag Result Units Limits GRO < 0.1520.152mg/LSpike Percent Recovery Surrogate Flag Result Units Dilution  ${
m Amount}$ Recovery Limits Trifluorotoluene (TFT) 0.103 mg/L1 0.100103 70.8 - 112 4-Bromofluorobenzene (4-BFB) 0.100mg/L1 0.100100 80 - 109

Method Blank (1)

QC Batch: 63280 Date Analyzed: 2009-09-04 Analyzed By: TP
Prep Batch: 54009 QC Preparation: 2009-09-04 Prepared By: TP

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HELSTF Chromate Spill Groundwater

Method Blank (1)

QC Batch: 63307 Date Analyzed: 2009-09-07 Analyzed By:
Prep Batch: 54035 QC Preparation: 2009-09-04 Prepared By:

Spike Percent Recovery Surrogate Result Units Dilution Amount Recovery Limits Flag 10.0 57.3 - 151 n-Triacontane 8.25 mg/L1 82

Method Blank (1)

QC Batch: 63330 Date Analyzed: 2009-09-02 Analyzed By: MD Prep Batch: 54057 QC Preparation: 2009-09-02 Prepared By: MD

Method Blank (1)

QC Batch: 63340 Date Analyzed: 2009-09-08 Analyzed By: KV Prep Batch: 54065 QC Preparation: 2009-09-08 Prepared By: KV

Method Blank (1)

QC Batch: 63370 Date Analyzed: 2009-09-05 Analyzed By: AH Prep Batch: 54092 QC Preparation: 2009-09-05 Prepared By: AH

Method Blank (1)

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

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Parameter	$\operatorname{Flag}$	Result	$\operatorname{Units}$	$\begin{array}{c} {\rm Reporting} \\ {\rm Limits} \end{array}$		
Total Silver	8	< 0.00111	m mg/L	0.00111		
Method Blank (1)						
QC Batch: 63374		Date Analyzed: 2009-09-09		Analyzed By: RR		
Prep Batch: 54079		QC Preparation: 2009-09-09		Prepared By: KV		
				Reporting		
Parameter	Flag	Result	Units	Limits		
Total Aluminum		< 0.00301	m mg/L	0.00301		
N. (1   1 D.   1 (1)						
Method Blank (1)						
QC Batch: 63374		Date Analyzed: 2009-09-09		Analyzed By: RR		
Prep Batch: 54079		QC Preparation: 2009-09-09		Prepared By: KV		
D.	DI	D 1	TT */	Reporting		
Parameter Total Arsenic	Flag	Result <0.00448	$\frac{\rm Units}{\rm mg/L}$	Limits 0.00448		
Method Blank (1)  QC Batch: 63374  Prep Batch: 54079		Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV		
Trop Baseli. 31075		Ge Freparation 2000 of of		Reporting		
Parameter	Flag	Result	Units	Limits		
Total Barium		< 0.00105	m mg/L	0.00105		
Method Blank (1)						
QC Batch: 63374 Prep Batch: 54079		Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV		
				Reporting		
Parameter	Flag	Result	Units	Limits		
Total Beryllium		< 0.000450	m mg/L	0.00045		
Method Blank (1)						
QC Batch: 63374		Date Analyzed: 2009-09-09		Analyzed By: RR		
Prep Batch: 54079		QC Preparation: 2009-09-09		Prepared By: KV		

Prep Batch: 54079

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Prepared By: KV

Hlac	D L	TT ',	Reporting
Flag	Result <0.000303	Units	Limits 0.000303
	< 0.000303	m mg/L	0.000303
	Date Analyzed: 2009-09-09		Analyzed By: RR
	QC Preparation: 2009-09-09		Prepared By: KV
Flag	Result	Units	$egin{array}{c}  ext{Reportin}, \  ext{Limits} \end{array}$
1148	<0.000822	mg/L	0.000822
	Date Analyzed: 2009-09-09		Analyzed By: RR
	QC Preparation: 2009-09-09		Prepared By: KV
Flag	Dogult	Unita	$egin{array}{c}  ext{Reportin}, \  ext{Limits} \end{array}$
r iag			0.000583
	Date Analyzed: 2009-09-09		Analyzed By: RR
	Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Prepared By: KV
Flag	QC Preparation: 2009-09-09  Result	Units	Prepared By: KV  Reporting  Limits
Flag	QC Preparation: 2009-09-09	Units mg/L	Prepared By: KV  Reporting
Flag	QC Preparation: 2009-09-09  Result		Prepared By: KV  Reporting  Limits
Flag	QC Preparation: 2009-09-09  Result  <0.000843  Date Analyzed: 2009-09-09		Prepared By: KV  Reporting Limits  0.000843  Analyzed By: RR
Flag	QC Preparation: 2009-09-09  Result  <0.000843		Prepared By: KV  Reporting Limits  0.000843  Analyzed By: RR Prepared By: KV
Flag	QC Preparation: 2009-09-09  Result  <0.000843  Date Analyzed: 2009-09-09		Prepared By: KV  Reporting Limits  0.000843  Analyzed By: RR
	Flag	QC Preparation: 2009-09-09  Flag Result  <0.000822  Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09	QC Preparation: 2009-09-09         Flag       Result       Units         <0.000822

QC Preparation: 2009-09-09

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Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Manganese	Flag	<0.000305	mg/L	0.000305
2000112011601000		10.000000	8/	0.000000
Method Blank (1)				
QC Batch: 63374 Prep Batch: 54079		Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV
Prep Batch: 54079		QC Preparation: 2009-09-09		- "
Parameter	Flag	$\operatorname{Result}$	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Molybdenum		< 0.00119	m mg/L	0.00119
Method Blank (1)				
QC Batch: 63374		Date Analyzed: 2009-09-09		Analyzed By: RR
Prep Batch: 54079		QC Preparation: 2009-09-09		Prepared By: KV
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Units}$	$\begin{array}{c} \text{Reporting} \\ \text{Limits} \end{array}$
Total Nickel	Flag	<0.00121	mg/L	0.00121
QC Batch: 63374 Prep Batch: 54079		Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	Result	Units	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Phosphorous		< 0.00289	$\mathrm{mg/L}$	0.00289
Method Blank (1)				
QC Batch: 63374 Prep Batch: 54079		Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV
				Reporting
Parameter Total Lead	Flag	Result < 0.00326	$\frac{\rm Units}{\rm mg/L}$	Limits 0.00326
TOTAL DOM		V0.00920	mg/ n	0.00320
Method Blank (1)				
QC Batch: 63374		Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV
Prep Batch: 54079		QU FTeparation: 2009-09-09		гтерагеа <b>Б</b> у: <b>К</b> V

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Parameter	Flag	Result	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Antimony	riag	<0.00440	$\frac{\rm mg/L}$	0.0044
Method Blank (1)				
QC Batch: 63374 Prep Batch: 54079		Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV
Trep Basen. 94079		QC 1 Teparación. 2003-03-03		·
Parameter	Flag	Result	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Selenium		< 0.00508	$\mathrm{mg/L}$	0.00508
Method Blank (1)				
QC Batch: 63374 Prep Batch: 54079		Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV
•		•		Reporting
Parameter	Flag	$\operatorname{Result}$	Units	Limits
Total Thallium		< 0.00488	mg/L	0.00488
Method Blank (1)				
QC Batch: 63374		Date Analyzed: 2009-09-09		Analyzed By: RR
Prep Batch: 54079		QC Preparation: 2009-09-09		Prepared By: KV
D	T)	D. U	TT 1	Reporting
Parameter Total Vanadium	Flag	Result < 0.000426	$\frac{\rm Units}{\rm mg/L}$	Limits 0.000426
2000 Johnson		(0.000120		0,000 120
Method Blank (1)				
QC Batch: 63374		Date Analyzed: 2009-09-09		Analyzed By: RR
Prep Batch: 54079		QC Preparation: 2009-09-09		Prepared By: KV
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Zinc	0	< 0.000465	$\mathrm{mg/L}$	0.000465
Method Blank (1)				
QC Batch: 63441		Date Analyzed: 2009-09-09		Analyzed By: AH
Prep Batch: 54150		QC Preparation: 2009-09-09		Prepared By: AH

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					Reporting
Parameter		Flag	Result	Units	Limits
Total Kjeldahl Nitrogen - N			<2.45	$_{ m mg/L}$	2.45
Method Blank (1)					
QC Batch: 63462		Date Analyzed:	2009-09-11		Analyzed By: RR
Prep Batch: 54154		QC Preparation:	2009-09-11		Prepared By: KV
Donomoton	Floor		Dogult	Unita	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Parameter Dissolved Chromium	Flag	<u></u>	Result .000583	Units	0.000583
Dissolved Chromium		<0	.000583	m mg/L	0.000383
Method Blank (1)					
QC Batch: 63473		Date Analyzed:	2009-09-03		Analyzed By: MD
Prep Batch: 54173		QC Preparation:	2009-09-03		Prepared By: MD
		Ç			Reporting
Parameter	Fla	g .	Result	Units	Limits
Total Dissolved Solids			< 5.00	m mg/L	5
Method Blank (1)  QC Batch: 63527 Prep Batch: 54231		Date Analyzed: QC Preparation:	2009-09-10 2009-09-10		Analyzed By: JG Prepared By: JG
		-			Reporting
Parameter	Flag	Resul		Units	Limits
Hydroxide Alkalinity Carbonate Alkalinity		<1.0 <1.0		mg/L as CaCo3 mg/L as CaCo3	1 1
Bicarbonate Alkalinity		<4.0		mg/L as CaCo3	$\frac{1}{4}$
Total Alkalinity		<4.0		mg/L as CaCo3	4
·				O,	
Method Blank (1)					
QC Batch: 63545		Date Analyzed:	2009-09-15		Analyzed By: RR
Prep Batch: 54079		QC Preparation:	2009-09-09		Prepared By: KV
Donometer	Ele	D	14	TT:-	Reporting
Parameter  Total Coloium	Flag	Res < 0.1		Units	Limits
Total Calcium		<0.1	1 (	m mg/L	0.117

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1	,	HELSTF Chromate Spill Ground	dwater	U
Method Blank (1)				
QC Batch: 63545 Prep Batch: 54079		Date Analyzed: 2009-09-15 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV
Parameter	Flor	Result	Units	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Potassium	Flag	<0.172	$\frac{\rm mg/L}$	0.172
			<i>Si</i>	
Method Blank (1)				
QC Batch: 63545		Date Analyzed: 2009-09-15		Analyzed By: RR
Prep Batch: 54079		QC Preparation: 2009-09-09		Prepared By: KV
				Reporting
Parameter	Flag	Result	Units	Limits
Total Magnesium		< 0.160	m mg/L	0.16
Method Blank (1)				
` ,				
QC Batch: 63545 Prep Batch: 54079		Date Analyzed: 2009-09-15 QC Preparation: 2009-09-09		Analyzed By: RR Prepared By: KV
Frep Datch: 54079		QC F reparation. 2009-09-09		Frepared by: KV
T	<b></b>	D 1	TT 1.	Reporting
Parameter Total Sodium	Flag	Result < 0.0500	$\frac{\rm Units}{\rm mg/L}$	$\frac{\text{Limits}}{0.05}$
Total Bourum		<b>\0.0900</b>	mg/ L	0.00
Method Blank (1)				
QC Batch: 63672		Date Analyzed: 2009-09-03		Analyzed By: JR
Prep Batch: 54360		QC Preparation: 2009-09-03		Prepared By: JR
				Reporting
Parameter	Flag	Result	Units	Limits
Bromide		< 0.0394	m mg/L	0.0394
Method Blank (1)				
QC Batch: 63672		Date Analyzed: 2009-09-03		Analyzed By: JR
Prep Batch: 54360		QC Preparation: 2009-09-03		Prepared By: JR
				Reporting
Parameter	Flag	Result	Units	Limits
Chloride	_	<0.640	mg/L	0.6404

< 0.640

Chloride

mg/L

0.6404

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Method Blank (1)

QC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JR

Prep Batch: 54360 QC Preparation: 2009-09-03 Prepared By: JR

Method Blank (1)

QC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JR
Prep Batch: 54360 QC Preparation: 2009-09-03 Prepared By: JR

Method Blank (1)

QC Batch: 63681 Date Analyzed: 2009-09-17 Analyzed By: KV Prep Batch: 54370 QC Preparation: 2009-09-17 Prepared By: KV

Prepared By: KV QC Preparation: 2009-09-17 Prepared By: KV

Method Blank (1)

QC Batch: 63699 Date Analyzed: 2009-09-17 Analyzed By: JR Prep Batch: 54391 QC Preparation: 2009-09-17 Prepared By: MD

**Duplicate (1)** Duplicated Sample: 209099

QC Batch: 63341 Date Analyzed: 2009-09-02 Analyzed By: JG Prep Batch: 54064 QC Preparation: 2009-09-02 Prepared By: JG

Duplicate Sample RPD RPD Result Result Units Dilution Limit Param 6.94 6.94 0 1.1 рН s.u.

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HELSTF Chromate Spill Groundwater

Duplicate (1) Duplicated Sample: 208953

QC Batch: 63473 Date Analyzed: 2009-09-03 Analyzed By: MD Prep Batch: 54173 QC Preparation: 2009-09-03 Prepared By: MD

**Duplicate (1)** Duplicated Sample: 208953

QC Batch: 63527 Date Analyzed: 2009-09-10 Analyzed By: JG
Prep Batch: 54231 QC Preparation: 2009-09-10 Prepared By: JG

	Duplicate	$\mathbf{Sample}$				RPD
Param	$\operatorname{Result}$	$\operatorname{Result}$	$\operatorname{Units}$	$\operatorname{Dilution}$	RPD	$\operatorname{Limit}$
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Carbonate Alkalinity	< 1.00	< 1.00	mg/L as $CaCo3$	1	0	20
Bicarbonate Alkalinity	262	260	mg/L as $CaCo3$	1	1	20
Total Alkalinity	262	260	mg/L as CaCo3	1	1	20

#### Laboratory Control Spike (LCS-1)

QC Batch: 63239 Date Analyzed: 2009-09-03 Analyzed By: ER
Prep Batch: 53976 QC Preparation: 2009-09-03 Prepared By: ER

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit GRO 1.08 mg/L1.00 < 0.152108 75.5 - 118 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
$\overline{\mathrm{GRO}}$	1.05	mg/L	1	1.00	< 0.152	105	75.5 - 118	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			$\operatorname{Spike}$	LCS	LCSD	$\mathrm{Rec}.$
$\mathbf{Surrogate}$	Result	Result	Units	Dil.	${f Amount}$	$\mathrm{Rec}.$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Trifluorotoluene (TFT)	0.109	0.104	mg/L	1	0.100	109	104	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.106	0.104	$_{ m mg/L}$	1	0.100	106	104	82.2 - 118

# Laboratory Control Spike (LCS-1)

QC Batch: 63280 Date Analyzed: 2009-09-04 Analyzed By: TP Prep Batch: 54009 QC Preparation: 2009-09-04 Prepared By: TP

Param

Total Mercury

# Work Order: 9090319 HELSTF Chromate Spill Groundwater

1

		-	•				
LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$	
Result	$_{ m Units}$	Dil.	${ m Amount}$	Result	Rec.	$_{ m Limit}$	

< 0.0000329

0.00100

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90.3 - 108

103

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

mg/L

0.00103

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	A mount	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Mercury	0.00104	mg/L	1	0.00100	< 0.0000329	104	90.3 - 108	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63307 Date Analyzed: 2009-09-07 Analyzed By: Prep Batch: 54035 QC Preparation: 2009-09-04 Prepared By:

	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
DRO	27.0	$_{ m mg/L}$	1	25.0	< 0.876	108	78.6 - 154

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
DRO	28.3	mg/L	1	25.0	< 0.876	113	78.6 - 154	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			$\operatorname{Spike}$	LCS	LCSD	$\mathrm{Rec.}$
$\mathbf{Surrogate}$	Result	Result	Units	Dil.	${f Amount}$	$\mathrm{Rec}.$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
n-Triacontane	8.66	8.90	${ m mg/L}$	1	10.0	87	89	57.3 - 151

#### Laboratory Control Spike (LCS-1)

QC Batch: 63330 Date Analyzed: 2009-09-02 Analyzed By: MD Prep Batch: 54057 QC Preparation: 2009-09-02 Prepared By: MD

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Hexavalent Chromium	0.515	mg/L	1	0.500	< 0.00594	103	95.4 - 105

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Hexavalent Chromium	0.506	$\mathrm{mg/L}$	1	0.500	< 0.00594	101	95.4 - 105	2	20

Laboratory Control Spike (LCS-1)

QC Batch: 63340 Prep Batch: 54065 Date Analyzed: 2009-09-08 QC Preparation: 2009-09-08 Analyzed By: KV Prepared By: KV

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LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Organic Carbon 48.4 < 0.401 97 89.5 - 114 mg/L50.0

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Organic Carbon	49.4	mg/L	1	50.0	< 0.401	99	89.5 - 114	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Silver	0.128	$_{ m mg/L}$	1	0.125	< 0.00111	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Silver	0.125	mg/L	1	0.125	< 0.00111	100	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09 Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	${f Limit}$
Total Aluminum	0.989	$\mathrm{mg/L}$	1	1.00	< 0.00301	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Aluminum	0.970	$\mathrm{mg/L}$	1	1.00	< 0.00301	97	85 - 115	2	20

Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

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LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Arsenic 0.5060.500< 0.00448101 85 - 115 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Arsenic	0.493	mg/L	1	0.500	< 0.00448	99	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09 Analyzed By: RR Prepared By: KV

LCS Matrix Spike Rec. Dil. Limit Param Result Units Amount Result Rec. Total Barium 1.05 mg/L1.00 < 0.00105105 85 - 115 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Barium	1.04	mg/L	1	1.00	< 0.00105	104	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09 Analyzed By: RR Prepared By: KV

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	${f Limit}$
Total Beryllium	0.0260	$\mathrm{mg/L}$	1	0.0250	< 0.000450	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Beryllium	0.0250	mg/L	1	0.0250	< 0.000450	100	85 - 115	4	20

### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

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	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Cadmium	0.263	${ m mg/L}$	1	0.250	< 0.000303	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	Amount	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Cadmium	0.258	mg/L	1	0.250	< 0.000303	103	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09 Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Cobalt	0.254	$_{ m mg/L}$	1	0.250	< 0.000822	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	$\mathbf{A}\mathbf{mount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Cobalt	0.251	mg/L	1	0.250	< 0.000822	100	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Chromium	0.102	$\mathrm{mg/L}$	1	0.100	< 0.000583	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Chromium	0.0990	mg/L	1	0.100	< 0.000583	99	85 - 115	3	20

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#### Laboratory Control Spike (LCS-1)

QC Batch: 63374Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Copper	0.130	m mg/L	1	0.125	< 0.000843	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	$\mathbf{A}\mathbf{mount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Copper	0.127	$\mathrm{mg/L}$	1	0.125	< 0.000843	102	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 54079

63374

Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR

Prepared By: KV

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$
Total Iron	0.523	$_{ m mg/L}$	1	0.500	< 0.000872	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	A mount	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Iron	0.515	mg/L	1	0.500	< 0.000872	103	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\operatorname{Rec}$ .	${f Limit}$
Total Manganese	0.264	$\mathrm{mg/L}$	1	0.250	< 0.000305	106	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Manganese	0.259	mg/L	1	0.250	< 0.000305	104	85 - 115	2	20

Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

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	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Molybdenum	0.552	${ m mg/L}$	1	0.500	< 0.00119	110	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Molybdenum	0.543	mg/L	1	0.500	< 0.00119	109	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Nickel	0.263	$_{ m mg/L}$	1	0.250	< 0.00121	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Nickel	0.257	mg/L	1	0.250	< 0.00121	103	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	${f Limit}$
Total Phosphorous	0.495	$\mathrm{mg/L}$	1	0.500	< 0.00289	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Phosphorous	0.481	mg/L	1	0.500	< 0.00289	96	85 - 115	3	20

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#### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Lead	0.507	${ m mg/L}$	1	0.500	< 0.00326	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Lead	0.492	mg/L	1	0.500	< 0.00326	98	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\mathrm{Dil}.$	${f Amount}$	Result	Rec.	$\operatorname{Limit}$
Total Antimony	0.245	$_{ m mg/L}$	1	0.250	< 0.00440	98	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Antimony	0.244	mg/L	1	0.250	< 0.00440	98	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	${f Limit}$
Total Selenium	0.457	$\mathrm{mg/L}$	1	0.500	< 0.00508	91	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Selenium	0.447	mg/L	1	0.500	< 0.00508	89	85 - 115	2	20

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#### Laboratory Control Spike (LCS-1)

QC Batch: 63374Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Thallium	0.522	${ m mg/L}$	1	0.500	< 0.00488	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Thallium	0.510	mg/L	1	0.500	< 0.00488	102	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$
Total Vanadium	0.252	$_{ m mg/L}$	1	0.250	< 0.000426	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	A mount	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Vanadium	0.248	mg/L	1	0.250	< 0.000426	99	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63374 Prep Batch: 54079 Date Analyzed: 2009-09-09 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Zinc	0.233	m mg/L	1	0.250	< 0.000465	93	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Zinc	0.230	mg/L	1	0.250	< 0.000465	92	85 - 115	1	20

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#### Laboratory Control Spike (LCS-1)

QC Batch: 63462Date Analyzed: Prep Batch: 54154

2009-09-11 QC Preparation: 2009-09-11

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Dissolved Chromium	0.100	$\mathrm{mg/L}$	1	0.100	< 0.000583	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Dissolved Chromium	0.101	mg/L	1	0.100	< 0.000583	101	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63545Date Analyzed: 2009-09-15 Prep Batch: 54079 QC Preparation: 2009-09-09

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Calcium	54.9	$\mathrm{mg/L}$	1	50.0	< 0.117	110	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCSD}$			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\operatorname{Dil}$ .	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Calcium	53.0	mg/L	1	50.0	< 0.117	106	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63545Date Analyzed: 2009-09-15 Analyzed By: RR Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		Rec.
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Potassium	54.0	mg/L	1	50.0	< 0.172	108	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	${f Amount}$	Result	Rec.	Limit	RPD	$\operatorname{Limit}$
Total Potassium	52.1	mg/L	1	50.0	< 0.172	104	85 - 115	4	20

HELSTF Chromate Spill Groundwater

#### Laboratory Control Spike (LCS-1)

QC Batch: 63545 Prep Batch: 54079 Date Analyzed: 2009-09-15 QC Preparation: 2009-09-09 Analyzed By: RR Prepared By: KV

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	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Magnesium	52.3	${ m mg/L}$	1	50.0	< 0.160	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Magnesium	50.1	mg/L	1	50.0	< 0.160	100	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63545 Prep Batch: 54079 Date Analyzed: 2009-09-15 QC Preparation: 2009-09-09 Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Sodium	55.4	$_{ m mg/L}$	1	50.0	< 0.0500	111	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Sodium	52.9	mg/L	1	50.0	< 0.0500	106	85 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63672 Prep Batch: 54360 Date Analyzed: 2009-09-03 QC Preparation: 2009-09-03 Analyzed By: JR Prepared By: JR

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Bromide	4.84	$\mathrm{mg/L}$	1	5.00	< 0.0394	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Bromide	4.66	mg/L	1	5.00	< 0.0394	93	90 - 110	4	20

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#### Laboratory Control Spike (LCS-1)

QC Batch: 63672 Prep Batch: 54360 Date Analyzed: 2009-09-03 QC Preparation: 2009-09-03 Analyzed By:  $_{
m JR}$ Prepared By:  $_{
m JR}$ 

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	Units	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Chloride	24.5	${ m mg/L}$	1	25.0	< 0.640	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Chloride	23.5	mg/L	1	25.0	< 0.640	94	90 - 110	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 63672 Prep Batch: 54360 Date Analyzed: 2009-09-03 QC Preparation: 2009-09-03 Analyzed By: JR Prepared By:  $_{
m JR}$ 

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Fluoride	4.81	mg/L	1	5.00	< 0.0434	96	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	$\operatorname{Dil}$ .	${f Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Fluoride	4.60	mg/L	1	5.00	< 0.0434	92	90 - 110	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 63672Prep Batch: 54360 Date Analyzed: 2009-09-03 QC Preparation: 2009-09-03 Analyzed By: JR Prepared By: JR

	LCS			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Sulfate	24.2	$\mathrm{mg/L}$	1	25.0	< 0.504	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Sulfate	23.1	mg/L	1	25.0	< 0.504	92	90 - 110	5	20

HELSTF Chromate Spill Groundwater

### Laboratory Control Spike (LCS-1)

 QC Batch:
 63699
 Date Analyzed:
 2009-09-17

 Prep Batch:
 54391
 QC Preparation:
 2009-09-17

Analyzed By: JR Prepared By: MD

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	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\mathrm{Rec}.$	$\operatorname{Limit}$
Oil and Grease	39.5	$\mathrm{mg/L}$	1	40.0	< 3.60	99	78 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Oil and Grease	35.2	mg/L	1	40.0	< 3.60	88	78 - 114	12	18

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209098

QC Batch: 63239 Date Analyzed: 2009-09-03 Analyzed By: ER
Prep Batch: 53976 QC Preparation: 2009-09-03 Prepared By: ER

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\mathrm{Rec.}$	$\operatorname{Limit}$
GRO	1.11	$_{ m mg/L}$	1	1.00	< 0.152	111	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param		Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
GRO	1	0.768	mg/L	1	1.00	< 0.152	77	48.4 - 136	36	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MS	MSD			$\operatorname{Spike}$	MS	MSD	$\mathrm{Rec}.$
$\mathbf{Surrogate}$		Result	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Rec.	$\mathrm{Rec.}$	$\operatorname{Limit}$
Trifluorotoluene (TFT)	2	0.112	0.0584	${ m mg/L}$	1	0.1	112	58	70.3 - 129
4-Bromofluorobenzene (4-BFB)	3	0.111	0.0576	$\mathrm{mg/L}$	1	0.1	111	58	82.5 - 118

### Matrix Spike (MS-1) Spiked Sample: 209098

QC Batch: 63280 Date Analyzed: 2009-09-04 Analyzed By: TP Prep Batch: 54009 QC Preparation: 2009-09-04 Prepared By: TP

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Mercury	0.000980	$\mathrm{mg/L}$	1	0.00100	< 0.0000329	98	80 - 116

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

<sup>&</sup>lt;sup>1</sup>MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

<sup>&</sup>lt;sup>2</sup>Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.

 $<sup>^3</sup>$  Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.

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Analyzed By:

Prepared By:

	MSD			Spike	Matrix		Rec.		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	Amount	Result	$\operatorname{Rec}$ .	Limit	RPD	$\operatorname{Limit}$
Total Mercury	0.000970	mg/L	1	0.00100	< 0.0000329	97	80 - 116	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 208666

 QC Batch:
 63307
 Date Analyzed:
 2009-09-07

 Prep Batch:
 54035
 QC Preparation:
 2009-09-04

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit DRO 24.3 25.0 < 0.87697 mg/L54 - 1441

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD Spike Matrix Rec. RPD Param Result Units Dil. Amount Result Rec. Limit RPD Limit DRO 23.5 20 mg/L25.0< 0.87694 54 - 144

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSMSDSpike MS MSD Rec. Dil. Limit Surrogate Result Result Units Amount Rec. Rec. 10.9 10.9 10 109 109 57.3 - 151 n-Triacontane mg/L1

Matrix Spike (MS-1) Spiked Sample: 209099

QC Batch: 63330 Date Analyzed: 2009-09-02 Analyzed By: MD Prep Batch: 54057 QC Preparation: 2009-09-02 Prepared By: MD

MS Spike Matrix Rec. Dil. Result Param Result Units Amount Rec. Limit Hexavalent Chromium 0.5601.11 0.556< 0.00659 101 80.1 - 118 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**MSD** RPD Spike Matrix Rec. RPD Param Result Units Dil. Amount Result Rec. Limit Limit Hexavalent Chromium 0.5661.11 0.556< 0.00659 102 80.1 - 118 20 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 208408

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	$_{ m MS}$			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Organic Carbon	51.2	mg/L	1	50.0	1.66	99	66.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Organic Carbon	48.4	$\mathrm{mg/L}$	1	50.0	1.66	93	66.9 - 121	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209099

QC Batch: 63370 Date Analyzed: 2009-09-05 Analyzed By: AH Prep Batch: 54092 QC Preparation: 2009-09-05 Prepared By: AH

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Ammonia-N	5.38	$_{ m mg/L}$	1	5.00	0.504	98	57.2 - 133

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Ammonia-N	5.26	mg/L	1	5.00	0.504	95	57.2 - 133	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Silver	0.120	$_{ m mg/L}$	1	0.125	< 0.00111	96	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		${ m Rec.}$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Silver	0.118	mg/L	1	0.125	< 0.00111	94	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

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	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	$\mathrm{Dil}.$	${ m Amount}$	Result	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Aluminum	1.26	mg/L	1	1.00	0.151	111	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Aluminum	1.24	$\mathrm{mg/L}$	1	1.00	0.151	109	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Arsenic	0.509	mg/L	1	0.500	0.061	90	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Arsenic	0.500	mg/L	1	0.500	0.061	88	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$
Total Barium	0.835	mg/L	1	1.00	0.012	82	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Barium	0.816	mg/L	1	1.00	0.012	80	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

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	3.40			C :1	3.6		D
	MS			Spike	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	$\mathrm{Dil}.$	${f Amount}$	Result	$\mathrm{Rec.}$	$\operatorname{Limit}$
Total Beryllium	0.0210	mø/L	1	0.0250	<0.000450	84	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Beryllium	0.0210	mg/L	1	0.0250	< 0.000450	84	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Cadmium 0.213 mg/L0.250< 0.000303 85 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Cadmium	0.199	mg/L	1	0.250	< 0.000303	80	75 - 125	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 0.200 0.250 < 0.000822 75 - 125 Total Cobalt mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Cobalt	0.197	mg/L	1	0.250	< 0.000822	79	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 209096

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	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\mathrm{Dil}.$	$\overline{\mathrm{Amount}}$	$\operatorname{Result}$	$\mathrm{Rec.}$	$\operatorname{Limit}$
Total Chromium	0.0810	mg/L	1	0.100	< 0.000583	81	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Chromium	0.0790	mg/L	1	0.100	< 0.000583	79	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\mathrm{Rec.}$	$\operatorname{Limit}$
Total Copper	0.118	$\mathrm{mg/L}$	1	0.125	< 0.000843	94	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Copper	0.117	mg/L	1	0.125	< 0.000843	94	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Iron	1.42	mg/L	1	0.500	1.01	82	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Iron	1.43	mg/L	1	0.500	1.01	84	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

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	MS			Spike	Matrix		Rec.
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Manganese	0.452	mg/L	1	0.250	0.257	78	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\operatorname{Dil}$ .	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Manganese	0.451	mg/L	1	0.250	0.257	78	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$
Total Molybdenum	0.472	mg/L	1	0.500	0.036	87	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Molybdenum	0.463	mg/L	1	0.500	0.036	85	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Nickel	0.207	mg/L	1	0.250	0.013	78	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Nickel	0.212	mg/L	1	0.250	0.013	80	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

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	MS			Spike	Matrix		Rec.
Param	Result	$\operatorname{Units}$	Dil.	$\overline{\text{Amount}}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Phosphorous	0.496	mg/L	1	0.500	0.058	88	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Phosphorous	0.486	$\mathrm{mg/L}$	1	0.500	0.058	86	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Lead	0.464	mg/L	1	0.500	< 0.00326	93	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Lead	0.453	mg/L	1	0.500	< 0.00326	91	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Antimony	0.235	$_{ m mg/L}$	1	0.250	< 0.00440	94	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Antimony	0.220	mg/L	1	0.250	< 0.00440	88	75 - 125	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

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	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\mathrm{Rec.}$	$\operatorname{Limit}$
Total Selenium	0.423	$_{ m mg/L}$	1	0.500	< 0.00508	85	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Selenium	0.428	mg/L	1	0.500	< 0.00508	86	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\mathrm{Dil}.$	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Thallium	0.389	$_{ m mg/L}$	1	0.500	< 0.00488	78	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Thallium	0.385	mg/L	1	0.500	< 0.00488	77	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR
Prep Batch: 54079 QC Preparation: 2009-09-09 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Vanadium	0.223	mg/L	1	0.250	0.013	84	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Vanadium	0.213	mg/L	1	0.250	0.013	80	75 - 125	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

### Work Order: 9090319 HELSTF Chromate Spill Groundwater

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	MS			Spike	Matrix		Rec.
Param	Result	$\operatorname{Units}$	Dil.	$\overline{ ext{Amount}}$	$\operatorname{Result}$	$\mathrm{Rec.}$	$\operatorname{Limit}$
Total Zinc	0.201	mg/L	1	0.250	< 0.000465	80	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Zinc	0.220	$\mathrm{mg/L}$	1	0.250	< 0.000465	88	75 - 125	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209230

QC Batch: 63441 Date Analyzed: 2009-09-09 Analyzed By: AH Prep Batch: 54150 QC Preparation: 2009-09-09 Prepared By:

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Kjeldahl Nitrogen - N	44.5	$\mathrm{mg/L}$	1	50.0	2.52	84	61.2 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		${ m Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Kjeldahl Nitrogen - N	46.2	mg/L	1	50.0	2.52	87	61.2 - 118	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209097

Analyzed By: RR QC Batch: 63462 Date Analyzed: 2009-09-11 Prep Batch: 54154 QC Preparation: 2009-09-11 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$
Dissolved Chromium	0.0990	mg/L	1	0.100	0.003	96	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Dissolved Chromium	0.0990	mg/L	1	0.100	0.003	96	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

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	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${\bf Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Calcium	269	mg/L	10	50.0	212	114	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	Limit	RPD	$\operatorname{Limit}$
Total Calcium	264	$\mathrm{mg/L}$	10	50.0	212	104	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63545Date Analyzed: 2009-09-15 Analyzed By: RRPrep Batch: QC Preparation: Prepared By: 540792009-09-09 KV

MSSpike Matrix Rec. Param Result Units Dil. AmountResult Rec. Limit 94.575 - 125 Total Potassium 142 95 mg/L50.0

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Potassium	152	mg/L	1	50.0	94.5	115	75 - 125	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 209096

Analyzed By: RR QC Batch: 63545Date Analyzed: 2009-09-15 Prep Batch: 54079QC Preparation: 2009-09-09 Prepared By: KV

MSSpike MatrixRec. Param Result Units Dil. Amount Result Rec. Limit 594 10 50.0 75 - 125 Total Magnesium mg/L542 104

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Magnesium	602	mg/L	10	50.0	542	120	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 209096

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	MS			Spike	Matrix		Rec.
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	$\overline{ ext{Amount}}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Sodium	2500	m mg/L	100	50.0	2450	100	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\operatorname{Rec}$ .	Limit	RPD	$\operatorname{Limit}$
Total Sodium	2490	$\mathrm{mg/L}$	100	50.0	2450	80	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JR Prep Batch: 54360 QC Preparation: 2009-09-03 Prepared By: JR

	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Bromide	2710	$\mathrm{mg/L}$	556	2780	<21.9	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Bromide	2710	mg/L	556	2780	<21.9	97	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\mathrm{Rec}.$	$\operatorname{Limit}$
Chloride	14600	mg/L	556	13900	795	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Chloride	14600	mg/L	556	13900	795	99	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

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	MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	$\overline{ ext{Amount}}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Fluoride	2690	$_{ m mg/L}$	556	2780	<24.1	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Fluoride	2680	mg/L	556	2780	<24.1	96	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JR Prep Batch: 54360 QC Preparation: 2009-09-03 Prepared By: JR

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Sulfate	17600	$\mathrm{mg/L}$	556	13900	3790	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Sulfate	17500	mg/L	556	13900	3790	99	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 209096

QC Batch: 63681 Date Analyzed: 2009-09-17 Analyzed By: KV Prep Batch: 54370 QC Preparation: 2009-09-17 Prepared By: KV

		MS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param		$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Nitrate and Nitrite as N	4	0.183	mg/L	2	0.200	0.124	30	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param		Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Nitrate and Nitrite as N	5	0.192	mg/L	2	0.200	0.124	34	80 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Standard (CCV-1)

QC Batch: 63239 Date Analyzed: 2009-09-03 Analyzed By: ER

<sup>4</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

<sup>&</sup>lt;sup>5</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
GRO		$_{ m mg/L}$	1.00	1.07	107	80 - 120	2009-09-03

### Standard (CCV-2)

QC Batch: 63239

Date Analyzed: 2009-09-03

Analyzed By: ER

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			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${\bf Analyzed}$
GRO		$\mathrm{mg/L}$	1.00	1.02	102	80 - 120	2009-09-03

### Standard (ICV-1)

QC Batch: 63280

Date Analyzed: 2009-09-04

Analyzed By: TP

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Mercury		$\mathrm{mg/L}$	0.00100	0.00108	108	90 - 110	2009-09-04

### Standard (CCV-1)

QC Batch: 63280

Date Analyzed: 2009-09-04

Analyzed By: TP

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Mercury		$_{ m mg/L}$	0.00100	0.00104	104	90 - 110	2009-09-04

### Standard (CCV-1)

QC Batch: 63307

Date Analyzed: 2009-09-07

Analyzed By:

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
DRO		mg/L	250	286	114	80 - 120	2009-09-07

### Standard (CCV-2)

QC Batch: 63307

Date Analyzed: 2009-09-07

Analyzed By:

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			1112.	LSIF CIIIO	mace Spin (	ground water		
Param	Flag	Units	CCVs True Conc.	CC Fou Co:	ınd	CCVs Percent Recovery	Percent Recovery Limits	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$
DRO	Tag	mg/L	250	26		105	80 - 120	2009-09-07
2100		1118/12			· <u>-</u>	100	00 120	
Standard (Co	CV-1)							
QC Batch: 63	3330		Date	Analyzed:	2009-09-02	2	Analy	zed By: MD
				$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
				True	Found	Percent	Recovery	Date
Param		Flag	$\operatorname{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Hexavalent Ch	romium		mg/L	0.500	0.505	101	90 - 110	2009-09-02
			- Oi					
Standard (Co	C <b>V-2</b> )							
QC Batch: 63	3330		Date	Analyzed:	2009-09-02	2	Analy	zed By: MD
				$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
				True	Found	Percent	Recovery	Date
Param		$\operatorname{Flag}$	$\operatorname{Units}$	Conc.	Conc.	Recovery	Limits	${ m Analyzed}$
Hexavalent Ch	romium		$\mathrm{mg/L}$	0.500	0.508	102	90 - 110	2009-09-02
Standard (Co	CV-2)							
QC Batch: 63	3340		Date	Analyzed:	2009-09-08	3	Analy	zed By: KV
				$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
				$\operatorname{True}$	Found	Percent	Recovery	Date
Param		Flag	$\operatorname{Units}$	Conc.	Conc.	Recovery	$\operatorname{Limits}^{\circ}$	Analyzed
Total Organic	Carbon		${ m mg/L}$	50.0	49.8	100	80 - 120	2009-09-08
Standard (Co	CV-3)							
QC Batch: 63	3340		Date	Analyzed:	2009-09-08	3	Analy	zed By: KV
				$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
				True	Found	Percent	Recovery	$\operatorname{Date}$
Param		Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${\bf Analyzed}$
Total Organic	Carbon		mg/L	50.0	49.0	98	80 - 120	2009-09-08

## Standard (ICV-1)

QC Batch: 63341 Date Analyzed: 2009-09-02 Analyzed By: JG

Work Order: 9090319 HELSTF Chromate Spill Groundwater

			CCVs	CCVs	$\mathrm{CCVs}$	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	$\operatorname{Limits}^{\circ}$	${\bf Analyzed}$
pН		s.u.	7.00	7.01	100	98 - 102	2009-09-02

### Standard (CCV-1)

QC Batch: 63341

Date Analyzed: 2009-09-02

Analyzed By: JG

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			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
pН		s.u.	7.00	7.00	100	98 - 102	2009-09-02

### Standard (ICV-1)

QC Batch: 63370

Date Analyzed: 2009-09-05

Analyzed By: AH

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Ammonia-N		m mg/L	5.00	4.93	99	85 - 115	2009-09-05

### Standard (CCV-1)

QC Batch: 63370

Date Analyzed: 2009-09-05

Analyzed By: AH

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Ammonia-N		$_{ m mg/L}$	5.00	4.98	100	85 - 115	2009-09-05

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Silver		m mg/L	0.250	0.254	102	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Work Order: 9090319
ELSTF Chromate Spill Groundwate

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Report Date. September 18, 2009				Chromate Spill	rage M	rage Number. 33 of 03		
Param	$\operatorname{Flag}$	${ m Units}$	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
Total Aluminum		$\mathrm{mg/L}$	1.00	1.02	102	90 - 110	2009-09-09	
Standard (ICV-1	1)							
QC Batch: 63374			Date Analyz	zed: 2009-09-	09	Anal	yzed By: RR	
Param	Flag	${ m Units}$	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$	
Total Arsenic	_	$\mathrm{mg/L}$	2.00	2.02	101	90 - 110	2009-09-09	
Standard (ICV-1 QC Batch: 63374	,		Date Analyz CCVs True	$ m ced: 2009 ext{-}09 ext{-} \ CCVs \ Found$	09 CCVs Percent	Anal Percent Recovery	yzed By: RR Date	
Param	Flag	$\operatorname{Units}$	$\frac{1}{\text{Conc.}}$	Found Conc.	Recovery	Limits	$egin{array}{c} egin{array}{c} egin{array}$	
Total Barium	8	mg/L	1.00	1.03	103	90 - 110	2009-09-09	
Standard (ICV-1 QC Batch: 63374	,		Date Analyz	zed: 2009-09-	09	Anal	yzed By: RR	
_			$rac{ ext{CCVs}}{ ext{True}}$	${ m CCVs} \ { m Found} \ { m Fo}$	$\begin{array}{c} { m CCVs} \\ { m Percent} \end{array}$	Percent Recovery	Date	
Param Total Beryllium	Flag	$\frac{\rm Units}{\rm mg/L}$	Conc. 1.00	Conc. 1.01	Recovery 101	Limits 90 - 110	Analyzed 2009-09-09	
Standard (ICV-1 QC Batch: 63374	•		Date Analyz	zed: 2009-09-	09	Anal	yzed By: RR	
			$\mathrm{CCVs}$	CCVs	$_{ m CCVs}$	Percent	<b>.</b>	

### Standard (ICV-1)

Total Cadmium

Flag

Units

mg/L

Param

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR

 ${\rm Found}$ 

 ${\rm Conc.}$ 

1.05

 ${\bf Percent}$ 

Recovery

105

Recovery

 ${\bf Limits}$ 

90 - 110

Date

 ${\bf Analyzed}$ 

2009-09-09

 ${\rm True}$ 

 ${\rm Conc.}$ 

1.00

Report Date: September 18, 2009				ork Order: 909 Chromate Spill	Page Number: 54 of 65		
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$\begin{array}{c} \text{Date} \\ \text{Analyzed} \end{array}$
Total Cobalt		mg/L	1.00	0.994	99	90 - 110	2009-09-09
Standard (ICV	V-1)						
QC Batch: 633	QC Batch: 63374			zed: 2009-09-	.09	Analy	yzed By: RR
Param	$\operatorname{Flag}$	$\operatorname{Units}$	CCVs True Conc.	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	CCVs Percent Recovery	Percent Recovery Limits	$\begin{array}{c} \text{Date} \\ \text{Analyzed} \end{array}$
Total Chromium		m mg/L	1.00	1.04	104	90 - 110	2009-09-09
Standard (ICV-1)  QC Batch: 63374			Date Analyz	zed: 2009-09-	09	Analy	yzed By: RR
Param	Flag	$\operatorname{Units}$	${ m CCVs} \ { m True} \ { m Conc.}$	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	$egin{array}{c}  ext{CCVs} \  ext{Percent} \  ext{Recovery} \end{array}$	Percent Recovery Limits	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$
Total Copper		$\mathrm{mg/L}$	1.00	1.02	102	90 - 110	2009-09-09
Standard (ICV QC Batch: 633	,		Date Analy	zed: 2009-09-	09	Anal	yzed By: RR
			$rac{ ext{CCVs}}{ ext{True}}$	${ m CCVs} \ { m Found}$	CCVs Percent	Percent Recovery	$\operatorname{Date}$
Param Total Iron	Flag	Units	Conc. 1.00	Conc. 1.04	Recovery 104	Limits 90 - 110	Analyzed 2009-09-09
Standard (ICV QC Batch: 633	,	m mg/L	Date Analy:				vzed By: RR

### Standard (ICV-1)

Total Manganese

Flag

 $\operatorname{Units}$ 

mg/L

Param

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR

 ${\rm CCVs}$ 

True

 ${\rm Conc.}$ 

1.00

 $\operatorname{CCVs}$ 

Found

Conc.

0.999

 $\mathrm{CCVs}$ 

Percent

Recovery

100

Percent

Recovery

 ${\rm Limits}$ 

90 - 110

Date

 ${\bf Analyzed}$ 

2009-09-09

Work Order: 9090319 HELSTF Chromate Spill Groundwater

-							
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Molybdenum		mg/L	1.00	1.01	101	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

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			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Nickel		mg/L	1.00	1.00	100	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Phosphorous		$\mathrm{mg/L}$	5.00	4.97	99	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Lead		$\mathrm{mg/L}$	2.00	2.08	104	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Antimony		mg/L	2.00	2.04	102	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Work Order: 9090319

HELSTF Chromate Spill Groundwater

			$rac{ ext{CCVs}}{ ext{True}}$	${ m CCVs} \ { m Found}$	$egin{array}{c}  ext{CCVs} \  ext{Percent} \end{array}$	$rac{ ext{Percent}}{ ext{Recovery}}$	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Selenium		m mg/L	1.00	1.03	103	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

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			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Total Thallium		$\mathrm{mg/L}$	5.00	5.14	103	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Vanadium		$\mathrm{mg/L}$	1.00	1.05	105	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Zinc		$_{ m mg/L}$	1.00	1.02	102	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Silver		mg/L	0.125	0.127	102	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Report Date: September 18, 2009				ork Order: 909 Thromate Spill	Page Number: 57 of 65			
Param	Flag	${ m Units}$	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{array}{c} { m Date} \\ { m Analyzed} \end{array}$	
Total Aluminum		$\mathrm{mg/L}$	1.00	0.993	99	90 - 110	2009-09-09	
Standard (CCV) QC Batch: 63374	09	Anal	yzed By: RR					
			$rac{ ext{CCVs}}{ ext{True}}$	${ m CCVs} \ { m Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	$\operatorname{Date}$	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	${ m Analyzed}$	
Total Arsenic		mg/L	1.00	1.02	102	90 - 110	2009-09-09	
Standard (CCV	-1)							
QC Batch: 63374	1		Date Analyz	zed: 2009-09-	09	Analyzed By: RR		
			${ m CCVs} \ { m True}$	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Total Barium		m mg/L	1.00	1.02	102	90 - 110	2009-09-09	
Standard (CCV	-1)							
QC Batch: 63374	1		Date Analyz	zed: 2009-09-	09	Analy	yzed By: RR	

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Total Beryllium		mg/L	1.00	1.00	100	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374	Date Analyzed: 2009-09-09	Analyzed By: RR
QC Datch: 05574	Date Analyzed. 2009-09-09	Allalyzed by: nn

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Total Cadmium		$\mathrm{mg/L}$	1.00	1.04	104	90 - 110	2009-09-09

# Standard (CCV-1)

QC Batch: 63374 Date Analyzed: 2009-09-09 Analyzed By: RR

Work Order: 9090319

HELSTF Chromate Spill Groundwater

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Total Cobalt		$\mathrm{mg/L}$	1.00	1.00	100	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

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			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Chromium		mg/L	1.00	1.02	102	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Copper		mg/L	1.00	1.00	100	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Iron		$_{ m mg/L}$	1.00	1.02	102	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Total Manganese		$_{ m mg/L}$	1.00	1.01	101	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Work Order: 9090319 HELSTF Chromate Spill Groundwater

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Molybdenum		mø/L	1.00	0.080	99	90 - 110	2009_09_09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

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			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\mathbf{Found}$	Percent	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Nickel		$\mathrm{mg/L}$	1.00	0.993	99	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Phosphorous		m mg/L	5.00	4.99	100	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	Units	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Lead		$\mathrm{mg/L}$	1.00	1.01	101	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Antimony		$_{ m mg/L}$	1.00	0.997	100	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Work Order: 9090319 HELSTF Chromate Spill Groundwater

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			CCVs True	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	$\operatorname{Limits}^{"}$	${\bf Analyzed}$
Total Selenium		$\mathrm{mg/L}$	1.00	1.01	101	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Thallium		mg/L	1.00	1.02	102	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Vanadium		$\mathrm{mg/L}$	1.00	1.04	104	90 - 110	2009-09-09

### Standard (CCV-1)

QC Batch: 63374

Date Analyzed: 2009-09-09

Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Zinc		$_{ m mg/L}$	1.00	1.02	102	90 - 110	2009-09-09

### Standard (ICV-1)

QC Batch: 63441

Date Analyzed: 2009-09-09

Analyzed By: AH

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	Conc.	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Kjeldahl Nitrogen - N		mg/L	5.00	5.21	104	85 - 115	2009-09-09

### Standard (CCV-1)

QC Batch: 63441

Date Analyzed: 2009-09-09

Analyzed By: AH

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	,	Н	ELSTF Chron	nate Spill Gr	oundwater	Ü	
Param		Flag Uni	CCVs True ts Conc.	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	CCVs Percent Recovery	Percent Recovery Limits	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$
Total Kjeldahl Nitrogen	- N	mg	/L 5.00	4.93	99	85 - 115	2009-09-09
Standard (ICV-1)		_					
QC Batch: 63462		Da	te Analyzed:	2009-09-11		Analy	zed By: RR
Param	Flag	$_{ m Units}$	$egin{array}{c} \mathrm{CCVs} \\ \mathrm{True} \\ \mathrm{Conc.} \end{array}$	$\begin{array}{c} {\rm CCVs} \\ {\rm Found} \\ {\rm Conc.} \end{array}$	CCVs Percent Recovery	Percent Recovery Limits	$\begin{array}{c} {\rm Date} \\ {\rm Analyzed} \end{array}$
Dissolved Chromium		$\mathrm{mg/L}$	1.00	1.03	103	90 - 110	2009-09-11
Standard (CCV-1)  QC Batch: 63462		Da	te Analyzed:	2009-09-11		Analy	zed By: RR
_			CCVs True	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	$\begin{array}{c} { m CCVs} \\ { m Percent} \end{array}$	Percent Recovery	Date
Param Dissolved Chromium	Flag	$\frac{\mathrm{Units}}{\mathrm{mg/L}}$	Conc. 1.00	Conc. 1.02	Recovery 102	Limits 90 - 110	Analyzed 2009-09-11
Standard (ICV-1)  QC Batch: 63473		3.	te Analyzed:	2009-09-03		Analy	zed By: MD
			CCVs True	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param Total Dissolved Solids	Flag		Conc. 1000	Conc. 994	Recovery 99	Limits 90 - 110	Analyzed 2009-09-03
Total Dissolved Solids		mg/L	1000	994	99	90 - 110	2009-09-05
Standard (CCV-1)  QC Batch: 63473		Da	te Analyzed:	2009-09-03		Analyz	zed By: MD
Param	Flag	$_{ m Units}$	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
m , 1 D' 1 1 0 1 1		/т	1000	0.00	0.0	00 110	2000 00 0

## Standard (ICV-1)

Total Dissolved Solids

QC Batch: 63527 Date Analyzed: 2009-09-10 Analyzed By: JG

989

99

90 - 110

2009-09-03

1000

mg/L

# ${\it Work~Order:~9090319} \\ {\it HELSTF~Chromate~Spill~Groundwater} \\$

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Analyzed By: JG

			COV	COL	CON	D .	
			CCVs	CCVs	CCVs	Percent	D-4-
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	$\operatorname{Recovery}$	$\operatorname{Limits}$	${ m Analyzed}$
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		90 - 110	2009-09-10
Carbonate Alkalinity		mg/L as CaCo3	0.00	240		90 - 110	2009-09-10
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	10.0		90 - 110	2009-09-10
Total Alkalinity		mg/L as CaCo3	250	250	100	90 - 110	2009-09-10

### Standard (CCV-1)

QC Batch: 63527 Date Analyzed: 2009-09-10

			$_{ m CCVs}$	$\frac{\text{CCVs}}{2}$	$_{ m CCVs}$	Percent	_
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	$\operatorname{Limits}$	${ m Analyzed}$
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		90 - 110	2009-09-10
Carbonate Alkalinity		mg/L as CaCo3	0.00	240		90 - 110	2009-09-10
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	10.0		90 - 110	2009-09-10
Total Alkalinity		mg/L as CaCo3	250	250	100	90 - 110	2009-09-10

### Standard (ICV-1)

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Calcium		$\mathrm{mg/L}$	50.0	50.7	101	90 - 110	2009-09-15

### Standard (ICV-1)

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Potassium		mg/L	50.0	51.7	103	90 - 110	2009-09-15

### Standard (ICV-1)

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Magnesium		m mg/L	50.0	52.4	105	90 - 110	2009-09-15

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Standard (ICV-1)

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Sodium		mg/L	50.0	51.6	103	90 - 110	2009-09-15

Standard (CCV-1)

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Total Calcium		mg/L	50.0	48.9	98	90 - 110	2009-09-15

Standard (CCV-1)

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Potassium		$_{ m mg/L}$	50.0	50.6	101	90 - 110	2009-09-15

Standard (CCV-1)

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Magnesium		mg/L	50.0	49.2	98	90 - 110	2009-09-15

Standard (CCV-1)

QC Batch: 63545 Date Analyzed: 2009-09-15 Analyzed By: RR

aatt

			CCVs	CCVs	CCVs	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Sodium		$\mathrm{mg/L}$	50.0	50.2	100	90 - 110	2009-09-15

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Standard (CCV-1)

QC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JR

Page Number: 64 of 65

	nelstr Chromate spin Groundwater								
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed		
Bromide		m mg/L	5.00	4.56	91	90 - 110	2009-09-03		
Standard	(CCV-1)								
QC Batch:	63672		Date An	alyzed: 2009-0	Analyzed By: JR				
			$rac{ ext{CCVs}}{ ext{True}}$	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Chloride		mg/L	25.0	23.1	92	90 - 110	2009-09-03		
Standard	(CCV-1)								
QC Batch: 63672			Date An	alyzed: 2009-0	Analyzed By: JR				
			$rac{ ext{CCVs}}{ ext{True}}$	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	$rac{ ext{CCVs}}{ ext{Percent}}$	$rac{ ext{Percent}}{ ext{Recovery}}$	Date		
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc.}$	Conc.	Recovery	Limits	${ m Analyzed}$		
Fluoride		mg/L	5.00	4.55	91	90 - 110	2009-09-03		
Standard	(CCV-1)								
QC Batch: 63672	63672		Date Analyzed: 2009-09-03			Ana	lyzed By: JR		
			${ m CCVs} \ { m True}$	${ m CCVs} \ { m Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date		
Davam	Floor	Unita			Dogorronm	Limita	Analyzad		
	Flag	Units mg/L	$\operatorname{Conc.}$	Conc.	Recovery 91	Limits 90 - 110	Analyzed 2009-09-03		
	Flag	$\begin{array}{c} \rm Units \\ \rm mg/L \end{array}$			Recovery 91	Limits 90 - 110	Analyzed 2009-09-03		
Sulfate			$\operatorname{Conc.}$	Conc.					
Sulfate Standard	(CCV-2)		Conc. 25.0	Conc.	91	90 - 110			
Param Sulfate Standard QC Batch:	(CCV-2)		Conc. 25.0  Date An	Conc. 22.7  alyzed: 2009-0	91 09-03 CCVs	90 - 110  Ana	2009-09-03 lyzed By: JR		
Sulfate Standard	(CCV-2)		Conc. 25.0 Date An	Conc. 22.7 alyzed: 2009-0	91	90 - 110 Ana	2009-09-03		

# Standard (CCV-2)

QC Batch: 63672 Date Analyzed: 2009-09-03 Analyzed By: JR

 $\operatorname{Param}$ 

Nitrate and Nitrite as N

Flag

 $\operatorname{Units}$ 

mg/L

 ${\rm Conc.}$ 

0.200

 ${\rm Conc.}$ 

0.188

Recovery

94

Limits

85 - 115

 ${\bf Analyzed}$ 

2009-09-17

Work Order: 9090319 HELSTF Chromate Spill Groundwater Page Number: 65 of 65

	HELSIF Chromate Spill Groundwater								
Param	Flag	$\operatorname{Units}$	CCVs True Conc.	CCV Foun Cond	d	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
Chloride	0	m mg/L	25.0	23.0		92	90 - 110	2009-09-03	
Standard	(CCV-2)								
QC Batch:	63672		Date	Analyzed: 2	Analyzed By: JR				
Param	Flag	$\operatorname{Units}$	CCVs True Conc.	CCV Foun Cond	d	CCVs Percent Recovery	$egin{array}{l}  ext{Percent} \  ext{Recovery} \  ext{Limits} \end{array}$	Date Analyzed	
Fluoride	1105	mg/L	5.00	4.52		90	90 - 110	2009-09-03	
Standard (CCV-2)  QC Batch: 63672			Date	Analyzed: 2	Analyzed By: JR				
QC Batch:	03072		$\mathrm{CCVs}$	CCV		CCVs	Percent	, v	
Param	Flag	Units	${ m True} \ { m Conc.}$	Found Conc		Percent Recovery	$egin{array}{c} { m Recovery} \\ { m Limits} \end{array}$	$egin{array}{c} { m Date} \\ { m Analyzed} \end{array}$	
Sulfate	0	${ m mg/L}$	25.0	22.6		90	90 - 110	2009-09-03	
Standard  QC Batch:	(ICV-1) 63681		Date	Analyzed: 2	009-09-17		Analy	zed By: KV	
Q Datein.	05001		Base	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	-	
Param		Flag	$\operatorname{Units}$	${ m True} \ { m Conc.}$	$\begin{array}{c} { m Found} \\ { m Conc.} \end{array}$	Percent Recovery	$egin{array}{c}  ext{Recovery} \  ext{Limits} \end{array}$	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$	
	Nitrite as N		mg/L	0.200	0.205	102	85 - 115	2009-09-17	
Standard	(CCV-1)								
QC Batch: 63681			Date Analyzed: 2009-09-17				Analyzed By: KV		
ח		T)	TI '4	$\begin{array}{c} { m CCVs} \\ { m True} \end{array}$	CCVs Found	${ m CCVs} \ { m Percent} \ { m Percent}$	Percent Recovery	Date	

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